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## ABSTRACT:

A soothing anti-viral lotion composition and a lotioned tissue product having a surface with the lotion composition applied thereto, and methods for making and using the same. The lotion composition includes an anti-viral organic acid and a topical delivery system. The topical delivery system includes one or more polyesters which allow incorporation of the organic acids into the lotion formulation, controls their delivery, and maintains them in the stratum corneum. The lotion composition may optionally contain a surfactant, an irritation inhibiting agent, and other additives.

## RELATED APPLICATIONS

[0001] This application is a continuation of U.S. App. Ser. No. 60/173,830, entitled, "Anti-Viral Lotion Tissue, and Methods for Making and Using the Same," filed Dec. 30, 1999, the entire disclosure of which is incorporated herein by reference.

## FIELD OF THE INVENTION

[0002] The present invention relates generally to anti-viral lotion composition and a lotioned tissue having anti-viral properties. More specifically, the present invention relates to a composition and a lotioned tissue including a surface having an anti-viral organic acid and a topical delivery system applied thereto, and methods for making and using the same.

## BACKGROUND

[0003] Various types of anti-viral tissues are known in the art. U.S. Pat. No. 5,830,487, issued to Klofta et al., discloses a lotioned tissue paper having an anti-viral lotion composition that is a semi-solid or solid at 20.degree. C. The lotion comprises an organic acid, a hydrophilic solvent, an emollient, an immobilizing agent, a nonionic surfactant, an oil and other additives.

[0004] U.S. Pat. No. 5,705,164, issued to Mackey et al., discloses a tissue paper having a lotion composition that is a solid or semisolid at room temperatures. The lotion composition may include an emollient, preferably a liquid polyol polyester, used to soften, sooth, or moisturize the skin, and may include oils and fatty alcohols, and an immobilizing agent which also may contain polyesters. Other optional components include water, skin soothing agents, or anti-inflammatories such as aloe vera or panthenol, and disinfectant antibacterial actives.

[0005] U.S. Pat. No. 5,871,763, issued to Luu et al., discloses substrates such as a tissue or towel which are treated with a lotion. The lotion provides a smooth feel that is lubricious and nongreasy, and is a solid at room temperature. The lotion may include an emollient such as a fat, oil, phospholipid, silicone, esters, or mixtures of esters; a retention agent; conventional surfactants, including cationic surfactants; anti-viral agents, including organic acids, a fragrance, a powder, an extract; and/or a humectant.

[0006] U.S. Pat. No. 5,720,966, issued to Ostendorf, discloses a tissue paper having a semisolid therapeutic composition comprising a medicinal component such as a virucide, disinfectant or analgesic and a lotion, which preferably includes mineral oil, paraffin wax, cetearyl alcohol, aloe extract and steareth-2.

[0007] U.S. Pat. No. 5,049,440, issued to Bornhoeft, III et al., discloses a wet wiper having a liquid preservative composition including water, a naturally occurring organic acid and a naturally occurring salt. The wet wipe may also contain fragrances and skin moisturizers such as glycerine, aloe vera, lecithin, lanolin, and lanolin derivatives.

[0008] U.S. Pat. No. 4,772,501, issued to Johnson et al., discloses a wet wipe product in the form of a fibrous wipe. The wipe has a liquid preservative composition having a mixture of citric and sorbic acids, and other optional components such as water, skin moisturizers, and fragrances.

[0009] U.S. Pat. No. 4,908,262, issued to Nelson, discloses toilet seat covers such as a fibrous sheet in which microencapsulated particles of water-soluble salts, preferably copper salts, and water-soluble ene-diol compounds are entrained. The ene-diol compounds include dihydroxymaleic acid, ascorbic acid and compounds thereof, squaric acid and dehydroxyfumaric acid.

[0010] U.S. Pat. No. 5,869,075, issued to Kryzik, discloses a soft tissue product having a hydrophilic composition applied to its surface. The composition includes a polyethylene glycol, a fatty alcohol, and lipophilic emollients. The composition may also include anti-microbial agents or other additives, such as skin exfoliating agents (alpha hydroxy acids) and cationic surfactants.

[0011] U.S. Pat. Nos. 4,828,912 and 4,897,304, both issued to Hossain et al., pertain to the use of a carboxylic acid/surfactant virucidal composition for use in absorbent products. U.S. Pat. Nos. 4,764,418 and 4,824,689, both issued to Kuenn et al., pertain to the addition of water-soluble humectants to carboxylic acid/surfactant virucides for use in tissue products to reduce irritation potential. U.S. Pat. No. 4,738,847 issued to Rothe et al., pertains to adding a carboxylic acid/surfactant virucide to the center ply of a three ply tissue to prevent the transfer of the virucidal composition to the user, and thereby reduce irritation potential.

[0012] Despite attempts made in a number of products, irritation caused by anti-viral organic acids in tissue products remains a persistent problem.

#### SUMMARY

[0013] Therefore, there continues to be a need for improvements to lotioned tissues. The present invention provides lotion compositions and tissue products that are effective in killing viruses, but do not irritate the skin.

[0014] In one aspect of the invention, a tissue product has at least one surface treated with a lotion composition including an anti-viral organic acid and a topical delivery system including at least one polyester. The lotion composition may also optionally include a surfactant, an irritation inhibiting agent, and other additives such as oils, waxes, and fatty alcohols.

[0015] In a further aspect of the invention, a method is provided for making the anti-viral tissue product. In yet another aspect of the invention, a method is provided for using the anti-viral tissue product to inhibit the spread of illness.

[0016] Other aspects of the invention will be apparent in view of the following description of the preferred embodiments.

#### DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS

[0017] The present invention concerns an improved lotion composition for application to a tissue product, and tissue products having the lotion composition applied to one or more surfaces thereof. The present invention is suitable for making tissue products such as facial tissues, bathroom tissues, table napkins, paper towels, and the like.

[0018] The present invention also concerns a method of preventing the spread of a viral infection by providing anti-viral lotion tissue product having the lotion composition applied thereto. The user contacts the tissue product to a body part, such as the nose, and some of the lotion is transferred to the user. A fluid containing at least one virus, such as a nasal discharge, is absorbed into the tissue. The anti-viral organic acid contacts the lotion composition on both the tissue and on the user's skin, and the virus is acted upon by the virucide in the lotion composition.

[0019] The lotion compositions of the present invention comprise an anti-viral organic acid and a topical delivery system or emollient comprising one or more polyesters. The topical delivery system allows incorporation of the acids into the lotion formulation, controls their delivery, and maintains them in the stratum corneum. This reduces the amount of acid necessary for efficacy, and thereby reduces the potential for irritation. Optional components include surfactants, irritation inhibiting agents, and additives such as oils, waxes, fatty alcohols, humectants, and the like. Each one of these components will be discussed in turn:

#### [0020] 1. Anti-viral organic acids

[0021] The anti-viral organic acids of the present invention are generally solids or semi-solids at room temperature. Preferred anti-viral organic acids comprise at least one member selected from the group consisting of carboxylic acids having the structure R-COOH, wherein R is a C.sub.1-C.sub.6 alkyl; C.sub.1-C.sub.6 alkyl carboxy; C.sub.1-C.sub.6 alkyl carboxyhydroxy; C.sub.1-C.sub.6 alkyl carboxy halo; C.sub.1-C.sub.6 alkylcarboxy dihydroxy; C.sub.1-C.sub.6 alkyl dicarboxyhydroxy; C.sub.1-C.sub.6 lower alkenyl; C.sub.1-C.sub.6 alkenyl carboxy; C.sub.1-C.sub.6 alkenyl phenyl; or substituted phenyl radical. Especially preferred carboxylic acids are citric, malic, adipic, glutaric, and succinic acids and mixtures thereof. In the above compounds one or more of the hydrogen atoms may be substituted by halogen atoms, hydroxyl groups, amino groups, thiol groups, nitro groups, cyano groups, and the like.

[0022] Typically, the anti-viral organic acid will comprise from about 1 weight percent to about 25 weight percent of lotion composition. As used herein, a "virucidal effective amount" for each compound will depend on the efficacy of the virucide. One possible way to measure the effective amount of a virucide is the amount sufficient to inactivate 99 percent (2 log drop) of rhinovirus type 16 within 10 minutes. A suitable method for testing virucidal efficacy is the Virucidal Assay Procedure disclosed in U.S. Pat. No. 4,897,304, which is incorporated herein by reference. However, those skilled in the art of virology will recognize other

suitable test procedures for this purpose.

[0023] 2. Topical delivery system

[0024] The topical delivery system (or emollient) of the present invention functions to incorporate the anti-viral organic acids into the lotion formulation, controls their delivery, and maintains them in the stratum corneum. This reduces the amount of acid necessary for efficacy, and thereby reduces the potential for irritation.

[0025] The topical delivery systems of the present invention comprise one or more polyesters. The polyesters of the present invention can be made from repeating monomeric units, as well as dimers, trimers, or tetramers.

[0026] Preferred polyesters include hydroxy-functional polyester diols and fatty alkyl capped complex polyesters. An especially preferred hydroxy-functional polyester diol is trimethylpentanediol/apidic acid copolymer (CAS No. 26139-53-7), sold under the trade name LEXOREZ.RTM.TL-8, by the Inolex Chemical Co. of Philadelphia, Pa. An especially preferred fatty alkyl capped complex polyester is trimethylpentanediol/apidic isononanoic acid copolymer (CAS NO. 200512-90-9), sold under the trade name LEXOREZ.RTM.T TC-8, also by the Inolex Chemical Co.

[0027] Preferably, the topical delivery system will comprise from about 5 weight percent to about 25 weight percent of lotion composition.

[0028] 3. Surfactant

[0029] The lotion compositions of the present invention may also contain a conditioning surfactant. The surfactants function to condition the skin while aiding in the inactivation of certain respiratory viruses.

[0030] Preferred cationic surfactants are quaternary ammonium compounds. More preferred cationic surfactants having the general formula: 1

[0031] wherein R.sub.1, R.sub.2, R.sub.3, R<sub>4</sub> are independently selected from branched or straight chain, saturated or unsaturated C.sub.1-C.sub.6 or C.sub.14-C.sub.24 compounds. No more than three of R.sub.1, R.sub.2, R.sub.3, and R<sub>4</sub> may be a C.sub.1-C.sub.6 alkyl. R<sub>3</sub> and R<sub>4</sub> may comprise ring structure.

[0032] Especially preferred cationic surfactants include stearylalkonium chloride;

[0033] methyl-1-(C.sub.12-C.sub.24) amido ethyl-2-(C.sub.12-C.sub.24) imidazolinium methyl sulfates; C.sub.12-C.sub.24 quaternized esteramines; di (C.sub.1-C.sub.6 alkyl) di (C.sub.12-C.sub.24 alkyl) quaternary ammonium methyl sulfates; and polyquaternary cationic compounds.

[0034] Preferably, the cationic surfactant will comprise from about 1 weight percent to about 25 weight percent of lotion composition.

[0035] 4. Irritation inhibiting agents

[0036] The lotion compositions of the present invention may also contain an irritation inhibiting agent. The irritation inhibiting agents function to soothe the skin that may be irritated by the other lotion components.

[0037] Preferred irritation inhibiting agents include strontium compounds and silicone glycols. Especially preferred strontium compounds include Sr.sup.2+ in combination with appropriate counter anions. Inorganic anions include, but are not limited to, nitrate, halogens (particularly F, Cl, Br and I), carbonate, bicarbonate, hydroxide, oxide, peroxide, nitrite, sulfide, bisulfate, persulfate, glycerophosphate, hypophosphate, borate and titanate. Examples of potentially suitable organic anions include carboxylic acids, alkoxylates, amino acids, peptides, saturated and unsaturated organic acids, and saturated and unsaturated fatty acids. Particular examples include citrate, oxalate, acetate, gluconate, lactate, tartrate, maleate, benzoate, propionate, salicylate, ascorbate, formate, succinate, folinate, aspartate, phthalate, oleate, palmitate, stearate, lauryl sulfate, lanolate,

myristate, behenate, caseinate, cyclamate, pantothenate, EDTA and other polyaminopolycarboxylates, saccharin, thioglycolate, laurate, methylparaben, propylparaben, and ricinoleate and sorbate anions.

[0038] Preferably, the irritation inhibiting agents will be present in concentrations from about 5.0mM to about 3000mM of lotion composition.

#### [0039] 5. Additives

[0040] The lotion composition may contain other conventional additives, such as oils, waxes, fatty alcohols, humectants, and the like.

[0041] The oils in the lotion composition serve as a carrier for the composition and to enhance skin barrier function. The amount of oil in the composition can be from about 1 to about 95 weight percent. Suitable oils include, but are not limited to, the following classes of oils: petroleum or mineral oils, such as mineral oil and petrolatum; animal oils, such as mink oil and lanolin oil; plant oils, such as aloe extract, sunflower oil and avocado oil; and silicone oils, such as dimethicone and alkyl methyl silicones.

[0042] The waxes in the lotion composition function as a melting point control and to restrain lotion composition on the surface of the substrate. The amount of wax in the composition can be from about 5 to about 95 weight percent. Suitable waxes include, but are not limited to the following classes: natural waxes, such as beeswax and carnauba wax; petroleum waxes, such as paraffin and ceresine wax; silicone waxes, such as alkyl methyl siloxanes; or synthetic waxes, such as synthetic beeswax and synthetic sperm wax.

[0043] The fatty alcohols in the lotion compositions function to enhance the feel of the lotion and to enhance the lotion's transfer abilities. The amount of fatty alcohol in the composition, if present, can be from about 5 to about 40 weight percent. Suitable fatty alcohols include alcohols having a carbon chain length of C.sub.14-C.sub.30, including cetyl alcohol, stearyl alcohol, and dodecyl alcohol.

[0044] The humectants in the lotion composition function to stabilize the moisture content of the tissue in the presence of fluctuating humidity. The water-soluble humectant can be any such material or compound which can be applied to the tissue web in a uniform manner, as by spraying, coating, dipping or printing, etc., and which possesses hygroscopic or humectant properties and which will not interfere with the virucidal effectiveness of the tissue product to the extent that the tissue product is no longer virucidally effective. Examples of suitable water-soluble humectants include: polyglycols (as hereinafter defined), propylene glycol, sorbitol, lactic acid, sodium lactate, glycerol, and ethoxylated castor oil.

[0045] Polyglycols, which for purposes herein include esters or ethers of polyglycols, having a weight average molecular weight of from about 75 to about 90,000 are suitable for purposes of this invention. This molecular weight range represents physical states ranging from a low viscosity liquid to a soft wax to a fairly hard solid. The higher molecular weight polyglycols naturally have to be melted in order to be applied to a tissue web. Examples of suitable polyglycols include polyethylene glycol, polypropylene glycol, polyoxypropylene adducts of glycerol, methoxypolyethylene glycol, polyethylene glycol ethers of sorbitol, polyethylene glycol ethers of glycerol, polyethylene glycol ethers of stearic acid, polyethylene glycol ethers of lauryl alcohol, citric acid fatty esters, malic acid fatty esters, polyethylene glycol ethers of oleyl alcohol, and ethoxylated stearate esters of sorbitol. Polyethylene glycol is a preferred polyglycol because it can be applied to the tissue in amounts which are effective in improving softness without leaving a noticeable residue on the consumer's hands. Polypropylene glycol is also effective, but tends to leave more of a residue at equivalent amounts and is more hydrophobic than polyethylene glycol.

[0046] The amount of water-soluble humectant in a single ply or web of a tissue product of this invention can be about 0.05 to weight percent or greater. The weight percentage amount can vary greatly, depending upon the desired tactile properties, the amount of carboxylic acid present that needs to be counteracted, the properties

of the water-soluble humectant itself, etc. At water-soluble humectant levels greater than about 20 weight percent, the tissue product becomes soggy and unacceptable for normal tissue usage. More preferably, the amount of polyglycol in a single ply or web of a tissue product can be from about 2 to about 6 weight percent.

[0047] In order to better enhance the benefits to consumers, additional ingredients can be used. The classes of ingredients and their corresponding benefits include, without limitation, vitamins (topical medicinal benefits); dimethicone (skin protection); powders (lubricity, oil absorption, skin protection); preservatives and antioxidants (product integrity); ethoxylated fatty alcohols; (wetability, process aids); fragrance (consumer appeal); lanolin derivatives (skin moisturization), colorants, optical brighteners, sunscreens, alpha hydroxy acids, natural herbal extracts, and the like.

#### [0048] Production

[0049] For purposes herein, "tissue products" are those paper products comprising one or more creped cellulosic webs or plies. Cellulosic webs suitable for use in the product of this invention include those webs useful for facial tissues, bathroom tissues, table napkins and paper towels. This includes webs having basis weights of from about 5 to about 30 pounds per 2880 square feet. It also includes webs containing a substantial proportion of synthetic fibers as well as webs which are substantially solely made of cellulose papermaking fibers.

[0050] The anti-viral lotion composition may be applied to the tissue product by any of the methods known in the art such as gravure printing, flexographic printing, spraying, WEKO, slot die coating, or electrostatic spraying. The preferred application methods are rotogravure printing methods, such as disclosed in commonly assigned copending U.S. Ser. No. 60/174,087, "Germicidal Tissue Product Using Rotogravure Rolls", filed on Dec. 30, 1999, or in U.S. Pat. No. 5,665,426, issued to Krzysik et al., both of which are incorporated herein by reference in their entireties.

[0051] In one preferred method of making an anti-viral tissue product, the lotion composition includes one or more anti-viral organic acids, one more polyesters, and one or more oils and/or one or more waxes, and has a melting point from about 30.degree. C. to about 70.degree. C. The lotion composition is heated until it melts, and then is uniformly applied one or more surfaces of a tissue web in spaced-apart deposits. The composition is then resolidified by cooling. The tissue web may be cooled before or after the deposits of the coating composition are applied in order to accelerate solidification of the deposits.

[0052] Preferred lotion add-on is in the range of 1% to 40% of total tissue weight, more specifically from about 5 to about 25 weight percent, and still more specifically from about 10 to about 15 weight percent. The add-on amount will depend upon the desired effect of the composition on the product attributes and the specific composition.

[0053] The surface area coverage of the composition is preferably uniform over substantially all of the tissue surface, but only partially covers the surface(s) of the tissue product. This is achieved by a large number of small spaced-apart deposits which, when viewed by the naked eye, appear to cover the entire surface, but in fact do not. The actual surface area coverage of the deposits can be from about 30 to about 99 percent, more specifically from about 50 to about 80 percent. ("Surface area" is the area of a simple plan view of the tissue, not taking into account the three-dimensional topography of the tissue which would otherwise increase the surface area value for any given tissue sample). By providing a large number of very small deposits, the penetration of the composition can be more easily controlled to substantially remain on or near the surface of the tissue.

[0054] The invention will be further illustrated with reference to the following specific example. It is understood that the example is given by way of illustration and is not meant to limit the disclosure or the claims that follow.

#### EXAMPLE

[0055] An antiviral lotion composition having the following components was prepared:

1

Component Weight Percent

Water 5.0  
Citric Acid 1.0  
Methyl-1-Oleyl Amido  
Ethyl-2-Oleyl 2.0  
Imidazolinium Methyl Sulfate,  
90%  
solids in propylene glycol  
Lexorez TL-8 10.0  
Mineral Oil  
49.04  
Dimethicone, 100 cSt 0.82  
Isopropyl Palmitate  
2.46  
Ceresin Wax 14.76  
Stearyl Alcohol 14.76  
Aloe  
Extract 0.08  
Vitamin E Acetate 0.08

[0056] The components were first grouped into two phases. Phase A contained the water, citric acid, methyl-1-oleyl amido ethyl-2-oleyl imidazolinium methyl sulfate, and Lexorez TL-8. Phase B contained the remaining components.

[0057] Phase A was prepared by adding the citric acid to the water, and the mixture was stirred until the citric acid dissolved. The methyl-1-oleyl amido ethyl-2-oleyl imidazolinium methyl sulfate was then added to the mixture and the new mixture was again stirred until dissolved. Finally, Lexorez TL-8 was added to the mixture, and the mixture was stirred until uniform.

[0058] Phase B was prepared by first adding the dimethicone to the isopropyl palmitate and stirring until the mixture was well dispersed. The mineral oil was heated to 60.degree. C., and the dimethicone/isopropyl palmitate mixture was then added to the hot mineral oil and mixed until well dispersed. Ceresin wax was added to the batch and mixed until melted. Stearyl alcohol was then added to the batch and mixed until melted. The aloe extract and vitamin E acetate were then added and mixed until well dispersed.

[0059] With Phase B at a temperature of 60-65.degree. C., Phase A was slowly added to Phase B with constant stirring. After thorough mixing, the composition was cooled to room temperature. The resulting composition was a uniform, soft, waxy, anti-viral solid, suitable for application to a tissue substrate.

[0060] It should be readily understood by those persons skilled in the art that the present invention is susceptible of a broad utility and application. Many embodiments and adaptations of the present invention other than those herein described, as well as many variations, modifications and equivalent arrangements will be apparent from or reasonably suggested by the present invention and the foregoing description thereof, without departing from the substance or scope of the present invention.



[0061] Accordingly, while the present invention has been described herein in detail in relation to several embodiments, it is to be understood that this disclosure is only illustrative and exemplary of the present invention and is made merely for purposes of providing a full and enabling disclosure of the invention. The foregoing disclosure is not intended or to be construed to limit the present invention or otherwise to exclude any such other embodiments, adaptations, variations, modifications and equivalent arrangements, the present invention being limited only by the claims appended hereto and the equivalents thereof.

#### CLAIMS:

We claim:

1. A non-irritating anti-viral lotioned tissue product having applied to at least one surface thereof an anti-viral lotion composition comprising: a virucidal effective amount of at least one anti-viral organic acid; a topical delivery system including at least one polyester.
2. The lotioned tissue product of claim 1, wherein said lotion composition comprises from about 1% to about 25% of said anti-viral organic acid.
3. The lotioned tissue product of claim 2, wherein said at least one anti-viral organic acid comprises at least one member from the group consisting of carboxylic acids having the structure R--COOH, wherein R is a C.sub.1-C.sub.6 alkyl; C.sub.1-C.sub.6 alkyl carboxy; C.sub.1-C.sub.6 alkyl carboxyhydroxy; C.sub.1-C.sub.6 alkyl carboxy halo; C.sub.1-C.sub.6 alkylcarboxy dihydroxy; C.sub.1-C.sub.6 alkyl dicarboxyhydroxy; C.sub.1-C.sub.6 alkenyl; C.sub.1-C.sub.6 alkenyl carboxy; C.sub.1-C.sub.6 alkenyl phenyl; or substituted phenyl radical.
4. The lotioned tissue product of claim 3, wherein one or more hydrogen atoms of R is substituted with a functional group selected from the group consisting of halogen atoms, hydroxyl groups, amino groups, thiol groups, nitro groups, and cyano groups.
5. The lotioned tissue product of claim 3, wherein said at least one anti-viral acid is selected from the group consisting of citric acid, malic acid, adipic acid, glutaric acid, succinic acid, and mixtures thereof.
6. The lotioned tissue product of claim 2, wherein said at least one polyester comprises a hydroxy-functional polyester diol.
7. The lotioned tissue product of claim 6, wherein said at least one polyester comprises trimethylpentanediol/adipic acid copolymer.
8. The lotioned tissue product of claim 2, wherein said at least one polyester comprises a fatty alkyl capped complex polyester.
9. The lotioned tissue product of claim 8, wherein said at least one polyester comprises trimethylpentanediol/adipic isononanoic acid copolymer.
10. The lotioned tissue product of claim 1, wherein the lotion composition further comprises a surfactant.
11. A lotioned tissue product having applied to at least one surface thereof an anti-viral lotion composition comprising: about 1% to about 25% of at least one anti-viral organic acid; about 5% to about 25% of an emollient including at least one polyester; and a cationic surfactant.
12. The lotioned tissue product of claim 11, wherein said emollient comprises at least one polyester from the group consisting of fatty alkyl capped complex polyesters, hydroxy-functional polyester diols, and mixtures thereof.
13. The lotioned tissue product of claim 11, wherein said cationic surfactant comprises a quaternary ammonium compound.

14. A non-irritating, anti-viral lotion composition comprising: a virucidal effective amount of at least one anti-viral organic acid; and a topical delivery system including at least one polyester.
15. The lotion composition of claim 14, wherein said lotion composition comprises from about 1% to about 25% of said anti-viral organic acid.
16. The lotion composition of claim 15, wherein said at least one anti-viral organic acid comprises at least one member from the group consisting of carboxylic acids having the structure R--COOH, wherein R is a C.sub.1-C.sub.6 alkyl; C.sub.1-C.sub.6 alkyl carboxy; C.sub.1-C.sub.6 alkyl carboxyhydroxy; C.sub.1-C.sub.6 alkyl carboxy halo; C.sub.1-C.sub.6 alkylcarboxy dihydroxy; C.sub.1-C.sub.6 alkyl dicarboxyhydroxy; C.sub.1-C.sub.6 alkenyl; C.sub.1-C.sub.6 alkenyl carboxy; C.sub.1-C.sub.6 alkenyl phenyl; or substituted phenyl radical.
17. The lotion composition of claim 16, wherein one or more hydrogen atoms of R is substituted with a functional group selected from the group consisting of halogen atoms, hydroxyl groups, amino groups, thiol groups, nitro groups, and cyano groups.
18. The lotion composition of claim 16, wherein said at least one anti-viral acid is selected from the group consisting of citric acid, malic acid, adipic acid, glutaric acid, succinic acid, and mixtures thereof.
19. The lotion composition of claim 15, wherein said at least one polyester comprises a hydroxy-functional polyester diol.
20. The lotion composition of claim 19, wherein said at least one polyester comprises trimethylpentanediol/adipic acid copolymer.
21. The lotion composition of claim 15, wherein said at least one polyester comprises a fatty alkyl capped complex polyester.
22. The lotion composition of claim 21, wherein said at least one polyester comprises trimethylpentanediol/adipic isononanoic acid copolymer.
23. The lotion composition of claim 14, wherein the lotion composition further comprises a surfactant.
24. The lotion composition of claim 23, wherein said surfactant comprises a cationic surfactant.
25. A anti-viral lotion composition comprising: about 1% to about 25% of at least one anti-viral organic acid; about 5% to about 25% of an emollient including at least one polyester; and a cationic surfactant.
26. The lotion composition of claim 25, wherein said emollient comprises at least one polyester from the group consisting of fatty alkyl capped complex polyesters, hydroxy-functional polyester diols, and mixtures thereof.
27. The lotion composition of claim 26, wherein said cationic surfactant comprises a quaternary ammonium compound.
28. A method of inhibiting the transfer of a viral infection comprising: providing anti-viral lotion tissue product having applied to at least one surface thereof an anti-viral lotion composition comprising a virucidal effective amount of at least one anti-viral organic acid and a topical delivery system including at least one polyester; contacting a fluid containing at least one virus with said anti-viral tissue product; and absorbing said fluid within said absorbent article to contact the fluid with said anti-viral lotion composition.
29. The method of claim 28, further comprising: transferring a portion of the lotion composition to the user of the tissue product.
30. The method of claim 28, wherein said at least one polyester comprises a hydroxy-functional polyester diol.

31. The method of claim 28, wherein said at least one polyester comprises a fatty alkyl capped complex polyester.

32. A method of making an anti-viral tissue product comprising: heating a composition comprising an a virucidal effective amount of at least one anti-viral organic acid at least one polyester, at least one oil and at least one wax to a temperature above the melting point of the composition, causing said composition to melt, said composition having a melting point of from about 30.degree. C. to about 70.degree. C.; uniformly applying the melted composition to at least one surface of a tissue web in spaced-apart deposits; and resolidifying the deposits of the melted composition.

33. The method of claim 32 wherein the heated composition is applied to the tissue web with a gravure printer.

34. The method of claim 32 wherein the tissue web is cooled before or after the deposits of the coating composition are applied in order to accelerate solidification of the deposits.

35. The method of claim 32 wherein the tissue product is a facial tissue.

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 1 of 1 returned.**☐ 1. Document ID: US 20020006434 A1

L3: Entry 1 of 1

File: PGPB

Jan 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020006434

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020006434 A1

TITLE: Anti-viral lotion tissue, and methods for making and using the same

PUBLICATION-DATE: January 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shanklin, Gary L.	Fremont	WI	US	
Krzysik, Duane G.	Appleton	WI	US	
Henderson, Cynthia W.	Neenah	WI	US	

US-CL-CURRENT: 424/443; 514/519, 514/557, 514/568

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

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Terms	Documents
L2 and (antiviral adj lotion)	1

**Display Format:**

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Terms	Documents
L6 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

Database: US Patents Full-Text Database  
US Pre-Grant Publication Full-Text Database  
JPO Abstracts Database  
EPO Abstracts Database  
Derwent World Patents Index  
IBM Technical Disclosure Bulletins

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[Refine Search](#)[Recall Text](#)[Clear](#)**Search History**DATE: Wednesday, March 06, 2002 [Printable Copy](#) [Create Case](#)**Set Name Query**  
side by side**Hit Count Set Name**  
result set

DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR

<u>L7</u>	L6 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59	<u>L7</u>
<u>L6</u>	L5 and (organic adj acid)	75	<u>L6</u>
<u>L5</u>	L4 and (fatty adj alkyl)	482	<u>L5</u>
<u>L4</u>	(polyester(3a)capped adj complex)	862517	<u>L4</u>
<u>L3</u>	L2 and (organic adj acid)	25	<u>L3</u>
<u>L2</u>	L1 and (hydroxy adj functional)	218	<u>L2</u>
<u>L1</u>	(polyester adj diol)	3429	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 59 returned.**☐ 1. Document ID: US 20020006434 A1

L15: Entry 1 of 59

File: PGPB

Jan 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020006434

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020006434 A1

TITLE: Anti-viral lotion tissue, and methods for making and using the same

PUBLICATION-DATE: January 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shanklin, Gary L.	Fremont	WI	US	
Krzysik, Duane G.	Appleton	WI	US	
Henderson, Cynthia W.	Neenah	WI	US	

US-CL-CURRENT: [424/443](#); [514/519](#), [514/557](#), [514/568](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 2. Document ID: US 20010004635 A1

L15: Entry 2 of 59

File: PGPB

Jun 21, 2001

PGPUB-DOCUMENT-NUMBER: 20010004635

PGPUB-FILING-TYPE: new-utility

DOCUMENT-IDENTIFIER: US 20010004635 A1

TITLE: SOFTENER ACTIVE DERIVED FROM ACYLATED TRIETHANOLAMINE

PUBLICATION-DATE: June 21, 2001

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
WAHL, ERROL HOFFMAN	CINCINNATI	OH	US	
TRINH, TOAN	MAINEVILLE	OH	US	
CARR, EUGENE ROBERT	PEORIA	IL	US	
MACDONALD, JAMES J.	HERNANDO	FL	US	
LIU, ZAIYOU	WEST CHESTER	OH	US	
CHUNG, ALEX HAEJOON	WEST CHESTER	OH	US	

US-CL-CURRENT: [510/515](#); [510/503](#), [510/518](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 3. Document ID: US 6335315 B1

L15: Entry 3 of 59

File: USPT

Jan 1, 2002

US-PAT-NO: 6335315

DOCUMENT-IDENTIFIER: US 6335315 B1

TITLE: Concentrated fabric softening composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 4. Document ID: US 6323172 B1

L15: Entry 4 of 59

File: USPT

Nov 27, 2001

US-PAT-NO: 6323172

DOCUMENT-IDENTIFIER: US 6323172 B1

TITLE: Concentrated, stable fabric softening composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 5. Document ID: US 6245732 B1

L15: Entry 5 of 59

File: USPT

Jun 12, 2001

US-PAT-NO: 6245732

DOCUMENT-IDENTIFIER: US 6245732 B1

TITLE: Delivery system having release inhibitor loaded zeolite and method for making same

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 6. Document ID: US 6110886 A

L15: Entry 6 of 59

File: USPT

Aug 29, 2000

US-PAT-NO: 6110886

DOCUMENT-IDENTIFIER: US 6110886 A

TITLE: Solid cast fabric softening compositions for application in a washing machine

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 7. Document ID: US 6048830 A

L15: Entry 7 of 59

File: USPT

Apr 11, 2000

US-PAT-NO: 6048830

DOCUMENT-IDENTIFIER: US 6048830 A

TITLE: Delivery system having release barrier loaded zeolite

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 8. Document ID: US 6025314 A

L15: Entry 8 of 59

File: USPT

Feb 15, 2000

US-PAT-NO: 6025314

DOCUMENT-IDENTIFIER: US 6025314 A

TITLE: Clear-rinsing agents with cationic polymers

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 9. Document ID: US 5977055 A

L15: Entry 9 of 59

File: USPT

Nov 2, 1999

US-PAT-NO: 5977055

DOCUMENT-IDENTIFIER: US 5977055 A

TITLE: High usage of fabric softener compositions for improved benefits

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 10. Document ID: US 5939475 A

L15: Entry 10 of 59

File: USPT

Aug 17, 1999

US-PAT-NO: 5939475

DOCUMENT-IDENTIFIER: US 5939475 A

TITLE: Organic fluid systems containing clay/polyamide compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

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Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 20 of 59 returned.**☐ 11. Document ID: US 5877145 A

L15: Entry 11 of 59

File: USPT

Mar 2, 1999

US-PAT-NO: 5877145

DOCUMENT-IDENTIFIER: US 5877145 A

TITLE: Concentrated fabric softening composition with good freeze/thaw recovery and highly unsaturated fabric softener compound therefor

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 12. Document ID: US 5871590 A

L15: Entry 12 of 59

File: USPT

Feb 16, 1999

US-PAT-NO: 5871590

DOCUMENT-IDENTIFIER: US 5871590 A

TITLE: Vehicle cleaning and drying compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 13. Document ID: US 5861370 A

L15: Entry 13 of 59

File: USPT

Jan 19, 1999

US-PAT-NO: 5861370

DOCUMENT-IDENTIFIER: US 5861370 A

TITLE: Concentrated, stable, premix for forming fabric softening composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KWIC
Draw Desc	Image									

☐ 14. Document ID: US 5855625 A

L15: Entry 14 of 59

File: USPT

Jan 5, 1999

US-PAT-NO: 5855625

DOCUMENT-IDENTIFIER: US 5855625 A

TITLE: Detergent compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 15. Document ID: US 5830845 A

L15: Entry 15 of 59

File: USPT

Nov 3, 1998

US-PAT-NO: 5830845

DOCUMENT-IDENTIFIER: US 5830845 A

TITLE: Concentrated fabric softening composition with good freeze/thaw recovery and highly unsaturated fabric softener compound therefor

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 16. Document ID: US 5759990 A

L15: Entry 16 of 59

File: USPT

Jun 2, 1998

US-PAT-NO: 5759990

DOCUMENT-IDENTIFIER: US 5759990 A

TITLE: Concentrated fabric softening composition with good freeze/thaw recovery and highly unsaturated fabric softener compound therefor

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 17. Document ID: US 5747443 A

L15: Entry 17 of 59

File: USPT

May 5, 1998

US-PAT-NO: 5747443

DOCUMENT-IDENTIFIER: US 5747443 A

TITLE: Fabric softening compound/composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 18. Document ID: US 5721205 A

L15: Entry 18 of 59

File: USPT

Feb 24, 1998

US-PAT-NO: 5721205

DOCUMENT-IDENTIFIER: US 5721205 A

TITLE: Cellulase fabric-conditioning compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 19. Document ID: US 5691295 A

L15: Entry 19 of 59

File: USPT

Nov 25, 1997

US-PAT-NO: 5691295

DOCUMENT-IDENTIFIER: US 5691295 A

TITLE: Detergent compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 20. Document ID: US 5635103 A

L15: Entry 20 of 59

File: USPT

Jun 3, 1997

US-PAT-NO: 5635103

DOCUMENT-IDENTIFIER: US 5635103 A

TITLE: Bleaching compositions and additives comprising bleach activators having alpha-modified lactam leaving-groups

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

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Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

**Display Format:**

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 21 through 30 of 59 returned.**☐ 21. Document ID: US 5574179 A

L15: Entry 21 of 59

File: USPT

Nov 12, 1996

US-PAT-NO: 5574179

DOCUMENT-IDENTIFIER: US 5574179 A

TITLE: Concentrated biodegradable quaternary ammonium fabric softener compositions and compounds containing intermediate iodine value unsaturated fatty acid chains

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 22. Document ID: US 5562849 A

L15: Entry 22 of 59

File: USPT

Oct 8, 1996

US-PAT-NO: 5562849

DOCUMENT-IDENTIFIER: US 5562849 A

TITLE: Concentrated biodegradable quaternary ammonium fabric softener compositions and compounds containing intermediate iodine value unsaturated fatty acid chains

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 23. Document ID: US 5545350 A

L15: Entry 23 of 59

File: USPT

Aug 13, 1996

US-PAT-NO: 5545350

DOCUMENT-IDENTIFIER: US 5545350 A

TITLE: Concentrated fabric softener compositions containing biodegradable fabric softeners

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 24. Document ID: US 5545340 A

L15: Entry 24 of 59

File: USPT

Aug 13, 1996

US-PAT-NO: 5545340

DOCUMENT-IDENTIFIER: US 5545340 A

TITLE: Concentrated biodegradable quaternary ammonium fabric softener compositions and compounds containing intermediate iodine value unsaturated fatty acid chains

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

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☐ 25. Document ID: US 5534170 A

L15: Entry 25 of 59

File: USPT

Jul 9, 1996

US-PAT-NO: 5534170

DOCUMENT-IDENTIFIER: US 5534170 A

TITLE: Mixed phosphorus- and sulfur-containing reaction products useful in power transmitting compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

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☐ 26. Document ID: US 5484543 A

L15: Entry 26 of 59

File: USPT

Jan 16, 1996

US-PAT-NO: 5484543

DOCUMENT-IDENTIFIER: US 5484543 A

TITLE: Amide containing friction modifier for use in power transmission fluids

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

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☐ 27. Document ID: US 5474690 A

L15: Entry 27 of 59

File: USPT

Dec 12, 1995

US-PAT-NO: 5474690

DOCUMENT-IDENTIFIER: US 5474690 A

TITLE: Concentrated biodegradable quaternary ammonium fabric softener compositions containing intermediate iodine value fatty acid chains

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

---

☐ 28. Document ID: US 5445747 A

L15: Entry 28 of 59

File: USPT

Aug 29, 1995

US-PAT-NO: 5445747

DOCUMENT-IDENTIFIER: US 5445747 A

TITLE: Cellulase fabric-conditioning compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMJC
Draw Desc	Image									

☐ 29. Document ID: US 5420186 A

L15: Entry 29 of 59

File: USPT

May 30, 1995

US-PAT-NO: 5420186

DOCUMENT-IDENTIFIER: US 5420186 A

TITLE: Internal mold release agents comprising metallic soaps compatibilized with liquid quaternary ammonium salts

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMJC
Draw Desc	Image									

☐ 30. Document ID: US 5411585 A

L15: Entry 30 of 59

File: USPT

May 2, 1995

US-PAT-NO: 5411585

DOCUMENT-IDENTIFIER: US 5411585 A

TITLE: Production of stable hydrolyzable organosilane solutions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMJC
Draw Desc	Image									

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Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

Display Format:

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L15: Entry 31 of 59

File: USPT

Mar 21, 1995

US-PAT-NO: 5399616

DOCUMENT-IDENTIFIER: US 5399616 A

TITLE: Lubricant-containing aqueous preparations of copolymers

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☐ 32. Document ID: US 5395539 A

L15: Entry 32 of 59

File: USPT

Mar 7, 1995

US-PAT-NO: 5395539

DOCUMENT-IDENTIFIER: US 5395539 A

TITLE: Amide containing friction modifier for use in power transmission fluids

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☐ 33. Document ID: US 5358647 A

L15: Entry 33 of 59

File: USPT

Oct 25, 1994

US-PAT-NO: 5358647

DOCUMENT-IDENTIFIER: US 5358647 A

TITLE: Fabric softening products based on a combination of pentaerythritol compound and bentonite

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KMC](#)☐ 34. Document ID: US 5326487 A

L15: Entry 34 of 59

File: USPT

Jul 5, 1994

US-PAT-NO: 5326487

DOCUMENT-IDENTIFIER: US 5326487 A



TITLE: Mixed phosphorous- and sulfur- containing reaction products useful in power transmitting compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KM/C
Draw Desc	Image									

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☐ 35. Document ID: US 5320768 A

L15: Entry 35 of 59

File: USPT

Jun 14, 1994

US-PAT-NO: 5320768

DOCUMENT-IDENTIFIER: US 5320768 A

TITLE: Hydroxy ether amine friction modifier for use in power transmission fluids and anti-wear additives for use in combination therewith

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KM/C
Draw Desc	Image									

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☐ 36. Document ID: US 5314633 A

L15: Entry 36 of 59

File: USPT

May 24, 1994

US-PAT-NO: 5314633

DOCUMENT-IDENTIFIER: US 5314633 A

TITLE: Low pressure derived mixed phosphorous- and sulfur- containing reaction products useful in power transmitting compositions and process for preparing same

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KM/C
Draw Desc	Image									

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☐ 37. Document ID: US 5290475 A

L15: Entry 37 of 59

File: USPT

Mar 1, 1994

US-PAT-NO: 5290475

DOCUMENT-IDENTIFIER: US 5290475 A

TITLE: Liquid softening and anti-static nonionic detergent composition with soil release promoting PET-POET copolymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KM/C
Draw Desc	Image									

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☐ 38. Document ID: US 5283311 A

L15: Entry 38 of 59

File: USPT

Feb 1, 1994

US-PAT-NO: 5283311

DOCUMENT-IDENTIFIER: US 5283311 A

TITLE: Fatty prepolymers and fatty-modified polyisocyanates as internal mold release agents

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 39. Document ID: US 5273684 A

L15: Entry 39 of 59

File: USPT

Dec 28, 1993

US-PAT-NO: 5273684

DOCUMENT-IDENTIFIER: US 5273684 A

TITLE: Composition for wetting hydrophobic capillary materials and the use thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

☐ 40. Document ID: US 5242612 A

L15: Entry 40 of 59

File: USPT

Sep 7, 1993

US-PAT-NO: 5242612

DOCUMENT-IDENTIFIER: US 5242612 A

TITLE: Mixed phosphorous- and sulfur-containing reaction products useful in power transmitting compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KIMC

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Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 41 through 50 of 59 returned.**☐ 41. Document ID: US 5185090 A

L15: Entry 41 of 59

File: USPT

Feb 9, 1993

US-PAT-NO: 5185090

DOCUMENT-IDENTIFIER: US 5185090 A

TITLE: Low pressure derived mixed phosphorous- and sulfur-containing reaction products useful in power transmitting compositions and process for preparing same

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 42. Document ID: US 5078893 A

L15: Entry 42 of 59

File: USPT

Jan 7, 1992

US-PAT-NO: 5078893

DOCUMENT-IDENTIFIER: US 5078893 A

TITLE: Synergistic combination of additives useful in power transmitting compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 43. Document ID: US 5078782 A

L15: Entry 43 of 59

File: USPT

Jan 7, 1992

US-PAT-NO: 5078782

DOCUMENT-IDENTIFIER: US 5078782 A

TITLE: Pesticidal concentrate compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 44. Document ID: US 4981602 A

L15: Entry 44 of 59

File: USPT

Jan 1, 1991

US-PAT-NO: 4981602

DOCUMENT-IDENTIFIER: US 4981602 A

TITLE: Lubricating oil compositions and concentrates

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 45. Document ID: US 4957649 A

L15: Entry 45 of 59

File: USPT

Sep 18, 1990

US-PAT-NO: 4957649

DOCUMENT-IDENTIFIER: US 4957649 A

TITLE: Lubricating oil compositions and concentrates

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 46. Document ID: US 4938881 A

L15: Entry 46 of 59

File: USPT

Jul 3, 1990

US-PAT-NO: 4938881

DOCUMENT-IDENTIFIER: US 4938881 A

TITLE: Lubricating oil compositions and concentrates

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 47. Document ID: US 4859721 A

L15: Entry 47 of 59

File: USPT

Aug 22, 1989

US-PAT-NO: 4859721

DOCUMENT-IDENTIFIER: US 4859721 A

TITLE: Adducts of carboxylic acids and isocyanates with epoxides, aqueous dispersions containing these adducts, processes for their preparation and their use in the autophoretic coating of metallic surfaces

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

☐ 48. Document ID: US 4790856 A

L15: Entry 48 of 59

File: USPT

Dec 13, 1988

US-PAT-NO: 4790856

DOCUMENT-IDENTIFIER: US 4790856 A

TITLE: Softening and anti-static nonionic detergent composition with sulfosuccinamate

detergent

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 49. Document ID: US 4764176 A

L15: Entry 49 of 59

File: USPT

Aug 16, 1988

US-PAT-NO: 4764176

DOCUMENT-IDENTIFIER: US 4764176 A

TITLE: Method for preventing the brightening effect of optical brightening agents on textiles

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

☐ 50. Document ID: US 4711730 A

L15: Entry 50 of 59

File: USPT

Dec 8, 1987

US-PAT-NO: 4711730

DOCUMENT-IDENTIFIER: US 4711730 A

TITLE: Capped 1,2-propylene terephthalate-polyoxyethylene terephthalate polyesters useful as soil release agents

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMOC
Draw Desc	Image									

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Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 51 through 59 of 59 returned.**☐ 51. Document ID: US 4705526 A

L15: Entry 51 of 59

File: USPT

Nov 10, 1987

US-PAT-NO: 4705526

DOCUMENT-IDENTIFIER: US 4705526 A

TITLE: Water-soluble or water-dispersible graft polymers and the preparation and use thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 52. Document ID: US 4705525 A

L15: Entry 52 of 59

File: USPT

Nov 10, 1987

US-PAT-NO: 4705525

DOCUMENT-IDENTIFIER: US 4705525 A

TITLE: Water-soluble or water-dispersible graft polymers, process for their preparation and the use thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 53. Document ID: US 4619703 A

L15: Entry 53 of 59

File: USPT

Oct 28, 1986

US-PAT-NO: 4619703

DOCUMENT-IDENTIFIER: US 4619703 A

TITLE: Stable aqueous dispersions of non-oxidized paraffin wax

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KIMC](#)☐ 54. Document ID: US 4264579 A

L15: Entry 54 of 59

File: USPT

Apr 28, 1981

US-PAT-NO: 4264579

DOCUMENT-IDENTIFIER: US 4264579 A

TITLE: Dentifrices

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 55. Document ID: US 4203851 A

L15: Entry 55 of 59

File: USPT

May 20, 1980

US-PAT-NO: 4203851

DOCUMENT-IDENTIFIER: US 4203851 A

TITLE: Fabric softening compositions and methods for manufacture thereof

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 56. Document ID: US 4201824 A

L15: Entry 56 of 59

File: USPT

May 6, 1980

US-PAT-NO: 4201824

DOCUMENT-IDENTIFIER: US 4201824 A

TITLE: Hydrophilic polyurethanes and their application as soil-release, anti-soil redeposition, and anti-static agents for textile substrates

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 57. Document ID: US 3994680 A

L15: Entry 57 of 59

File: USPT

Nov 30, 1976

US-PAT-NO: 3994680

DOCUMENT-IDENTIFIER: US 3994680 A

TITLE: Textile print pastes containing disperse dyes

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KMIC

☐ 58. Document ID: US 3943234 A

L15: Entry 58 of 59

File: USPT

Mar 9, 1976

US-PAT-NO: 3943234

DOCUMENT-IDENTIFIER: US 3943234 A

TITLE: Acidic emollient liquid detergent composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 59. Document ID: US 3632300 A

L15: Entry 59 of 59

File: USPT

Jan 4, 1972

US-PAT-NO: 3632300

DOCUMENT-IDENTIFIER: US 3632300 A

TITLE: POLYACRYLONITRILE DYEING PROCESS

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

[Generate Collection](#)[Print](#)

Terms	Documents
L14 and (citric adj acid or malic adj acid or adipic adj acid or glutaric adj acid or succinic adj acid)	59

**Display Format:**

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 25 returned.**☐ 1. Document ID: US 20020006434 A1

L3: Entry 1 of 25

File: PGPB

Jan 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020006434

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020006434 A1

TITLE: Anti-viral lotion tissue, and methods for making and using the same

PUBLICATION-DATE: January 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shanklin, Gary L.	Fremont	WI	US	
Krzensik, Duane G.	Appleton	WI	US	
Henderson, Cynthia W.	Neenah	WI	US	

US-CL-CURRENT: [424/443](#); [514/519](#), [514/557](#), [514/568](#)

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">RMC</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>									

☐ 2. Document ID: US 6313335 B1

L3: Entry 2 of 25

File: USPT

Nov 6, 2001

US-PAT-NO: 6313335

DOCUMENT-IDENTIFIER: US 6313335 B1

TITLE: Room temperature curable silane terminated and stable waterborne polyurethane dispersions which contain fluorine and/or silicone and low surface energy coatings prepared therefrom

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>	<a href="#">RMC</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>									

☐ 3. Document ID: US 6204350 B1

L3: Entry 3 of 25

File: USPT

Mar 20, 2001

US-PAT-NO: 6204350

DOCUMENT-IDENTIFIER: US 6204350 B1

TITLE: Cure-on-demand, moisture-curable compositions having reactive silane functionality

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 4. Document ID: US 6096842 A

L3: Entry 4 of 25

File: USPT

Aug 1, 2000

US-PAT-NO: 6096842

DOCUMENT-IDENTIFIER: US 6096842 A

TITLE: Aerobically curable adhesive

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 5. Document ID: US 5989527 A

L3: Entry 5 of 25

File: USPT

Nov 23, 1999

US-PAT-NO: 5989527

DOCUMENT-IDENTIFIER: US 5989527 A

TITLE: Compositions and methods for improving the performance of chemical exfoliating agents, sunless tanning agents, skin lightening agents and insect repellents

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 6. Document ID: US 5688573 A

L3: Entry 6 of 25

File: USPT

Nov 18, 1997

US-PAT-NO: 5688573

DOCUMENT-IDENTIFIER: US 5688573 A

TITLE: Halogen-free acrylic urethane sheet material

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K00C

☐ 7. Document ID: US 5631330 A

L3: Entry 7 of 25

File: USPT

May 20, 1997

US-PAT-NO: 5631330

DOCUMENT-IDENTIFIER: US 5631330 A

TITLE: Process for preparing phenol-functional polymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 8. Document ID: US 5458920 A

L3: Entry 8 of 25

File: USPT

Oct 17, 1995

US-PAT-NO: 5458920

DOCUMENT-IDENTIFIER: US 5458920 A

TITLE: Gloss reduction agent for solvent based pigmented coating formulations

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 9. Document ID: US 5453469 A

L3: Entry 9 of 25

File: USPT

Sep 26, 1995

US-PAT-NO: 5453469

DOCUMENT-IDENTIFIER: US 5453469 A

TITLE: Liquid polymer and polyol compositions, and process for preparing phenol-functional polymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 10. Document ID: US 5382616 A

L3: Entry 10 of 25

File: USPT

Jan 17, 1995

US-PAT-NO: 5382616

DOCUMENT-IDENTIFIER: US 5382616 A

TITLE: Polyisocyanate composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

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Terms	Documents
L2 and (organic adj acid)	25

Display Format:

-

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 20 of 25 returned.**☐ 11. Document ID: US 5368806 A

L3: Entry 11 of 25

File: USPT

Nov 29, 1994

US-PAT-NO: 5368806

DOCUMENT-IDENTIFIER: US 5368806 A

TITLE: Production of moldings by the reaction injection molding process

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 12. Document ID: US 5334676 A

L3: Entry 12 of 25

File: USPT

Aug 2, 1994

US-PAT-NO: 5334676

DOCUMENT-IDENTIFIER: US 5334676 A

TITLE: Epoxy resin advanced with polyphenol/oxyalkylated aromatic or cycloaliphatic diglycidyl ether product

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 13. Document ID: US 5276071 A

L3: Entry 13 of 25

File: USPT

Jan 4, 1994

US-PAT-NO: 5276071

DOCUMENT-IDENTIFIER: US 5276071 A

TITLE: Phenol-terminated oxyalkylated or (cyclo)aliphatic diglycidyl ethers

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)☐ 14. Document ID: US 5260356 A

L3: Entry 14 of 25

File: USPT

Nov 9, 1993

US-PAT-NO: 5260356

DOCUMENT-IDENTIFIER: US 5260356 A

TITLE: Transesterification cure of thermosetting latex coatings

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)

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☐ 15. Document ID: US 5239018 A

L3: Entry 15 of 25

File: USPT

Aug 24, 1993

US-PAT-NO: 5239018

DOCUMENT-IDENTIFIER: US 5239018 A

TITLE: Liquid polymer and polyol compositions, and process for preparing phenol-functional polymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)

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☐ 16. Document ID: US 5212262 A

L3: Entry 16 of 25

File: USPT

May 18, 1993

US-PAT-NO: 5212262

DOCUMENT-IDENTIFIER: US 5212262 A

TITLE: Epoxy resin advanced with diphenol/diglycidyl ether adducts

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)

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☐ 17. Document ID: US 5072026 A

L3: Entry 17 of 25

File: USPT

Dec 10, 1991

US-PAT-NO: 5072026

DOCUMENT-IDENTIFIER: US 5072026 A

TITLE: Polyureas by reaction injection moulding of en amino-functional aliphatic polyether resin-containing systems and an enamine-terminated polyether

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

[KVMC](#)

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☐ 18. Document ID: US 5041494 A

L3: Entry 18 of 25

File: USPT

Aug 20, 1991

US-PAT-NO: 5041494

DOCUMENT-IDENTIFIER: US 5041494 A

TITLE: Aqueous solutions or dispersions of polyurethanes, a process for their preparation and their use in coating compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/M/C

☐ 19. Document ID: US 4983659 A

L3: Entry 19 of 25

File: USPT

Jan 8, 1991

US-PAT-NO: 4983659

DOCUMENT-IDENTIFIER: US 4983659 A

TITLE: Reaction injection molding compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/M/C

☐ 20. Document ID: US 4935460 A

L3: Entry 20 of 25

File: USPT

Jun 19, 1990

US-PAT-NO: 4935460

DOCUMENT-IDENTIFIER: US 4935460 A

TITLE: Reaction injection molding compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

K/M/C

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Terms	Documents
L2 and (organic adj acid)	25

**Display Format:**

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 21 through 25 of 25 returned.**☐ 21. Document ID: US 4872961 A

L3: Entry 21 of 25

File: USPT

Oct 10, 1989

US-PAT-NO: 4872961

DOCUMENT-IDENTIFIER: US 4872961 A

TITLE: Corrosion resistant, low temperature cured cathodic electrodeposition coating

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[RMC](#)☐ 22. Document ID: US 4855184 A

L3: Entry 22 of 25

File: USPT

Aug 8, 1989

US-PAT-NO: 4855184

DOCUMENT-IDENTIFIER: US 4855184 A

TITLE: Radiation-curable protective coating composition

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[RMC](#)☐ 23. Document ID: US 4794129 A

L3: Entry 23 of 25

File: USPT

Dec 27, 1988

US-PAT-NO: 4794129

DOCUMENT-IDENTIFIER: US 4794129 A

TITLE: Reaction injection molding compositions

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[RMC](#)☐ 24. Document ID: US 4687709 A

L3: Entry 24 of 25

File: USPT

Aug 18, 1987

US-PAT-NO: 4687709

DOCUMENT-IDENTIFIER: US 4687709 A

TITLE: Magnetic recording carrier containing radiation hardenable dispersing agents



Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KUMC

☐ 25. Document ID: US 4053415 A

L3: Entry 25 of 25

File: USPT

Oct 11, 1977

US-PAT-NO: 4053415

DOCUMENT-IDENTIFIER: US 4053415 A

TITLE: Unsaturated polyester ether having a photocrosslinkable moiety

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KUMC

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Terms	Documents
L2 and (organic adj acid)	25

**Display Format:**

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Terms	Documents
l6 and (organic adj acid)	21

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JPO Abstracts Database	
EPO Abstracts Database	
Derwent World Patents Index	
IBM Technical Disclosure Bulletins	▼

**Search:**

L10

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**Set Name Query**

side by side

**Hit Count Set Name**

result set

*DB=USPT,PGPB,JPAB,EPAB,DWPI; PLUR=YES; OP=OR*

<u>L10</u>	l6 and (organic adj acid)	21	<u>L10</u>
<u>L9</u>	L8 and (lotion(3a)tissue)	9	<u>L9</u>
<u>L8</u>	L7 and (citric adj acid or malic adj acid or glutaric adj acid or succinic adj acid)	54	<u>L8</u>
<u>L7</u>	L6 and (adipic adj acid)	95	<u>L7</u>
<u>L6</u>	L5 and (copolymer(3a)trimethylpentanediol adj acid)	155	<u>L6</u>
<u>L5</u>	L4 and (hydroxy adj functional)	218	<u>L5</u>
<u>L4</u>	(polyester adj diol)	3429	<u>L4</u>
<u>L3</u>	L2 and (antiviral adj lotion)	1	<u>L3</u>
<u>L2</u>	L1 and (tissue or paper)	49185	<u>L2</u>
<u>L1</u>	(acid) and (polyester)	182199	<u>L1</u>

END OF SEARCH HISTORY

**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 1 through 10 of 21 returned.**☐ 1. Document ID: US 20020006434 A1

L10: Entry 1 of 21

File: PGPB

Jan 17, 2002

PGPUB-DOCUMENT-NUMBER: 20020006434

PGPUB-FILING-TYPE: new

DOCUMENT-IDENTIFIER: US 20020006434 A1

TITLE: Anti-viral lotion tissue, and methods for making and using the same

PUBLICATION-DATE: January 17, 2002

## INVENTOR-INFORMATION:

NAME	CITY	STATE	COUNTRY	RULE-47
Shanklin, Gary L.	Fremont	WI	US	
Krzysik, Duane G.	Appleton	WI	US	
Henderson, Cynthia W.	Neenah	WI	US	

US-CL-CURRENT: [424/443](#); [514/519](#), [514/557](#), [514/568](#)

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 2. Document ID: US 6313335 B1

L10: Entry 2 of 21

File: USPT

Nov 6, 2001

US-PAT-NO: 6313335

DOCUMENT-IDENTIFIER: US 6313335 B1

TITLE: Room temperature curable silane terminated and stable waterborne polyurethane dispersions which contain fluorine and/or silicone and low surface energy coatings prepared therefrom

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KWIC
Draw Desc	Image										

☐ 3. Document ID: US 6204350 B1

L10: Entry 3 of 21

File: USPT

Mar 20, 2001

US-PAT-NO: 6204350

DOCUMENT-IDENTIFIER: US 6204350 B1

TITLE: Cure-on-demand, moisture-curable compositions having reactive silane functionality

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

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☐ 4. Document ID: US 5688573 A

L10: Entry 4 of 21

File: USPT

Nov 18, 1997

US-PAT-NO: 5688573

DOCUMENT-IDENTIFIER: US 5688573 A

TITLE: Halogen-free acrylic urethane sheet material

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

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☐ 5. Document ID: US 5631330 A

L10: Entry 5 of 21

File: USPT

May 20, 1997

US-PAT-NO: 5631330

DOCUMENT-IDENTIFIER: US 5631330 A

TITLE: Process for preparing phenol-functional polymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	Claims	KMIC
Draw Desc	Image										

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☐ 6. Document ID: US 5458920 A

L10: Entry 6 of 21

File: USPT

Oct 17, 1995

US-PAT-NO: 5458920

DOCUMENT-IDENTIFIER: US 5458920 A

TITLE: Gloss reduction agent for solvent based pigmented coating formulations

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments		KMIC
Draw Desc	Image										

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☐ 7. Document ID: US 5453469 A

L10: Entry 7 of 21

File: USPT

Sep 26, 1995

US-PAT-NO: 5453469

DOCUMENT-IDENTIFIER: US 5453469 A

TITLE: Liquid polymer and polyol compositions, and process for preparing phenol-functional polymer

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 8. Document ID: US 5382616 A

L10: Entry 8 of 21

File: USPT

Jan 17, 1995

US-PAT-NO: 5382616

DOCUMENT-IDENTIFIER: US 5382616 A

TITLE: Polyisocyanate composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 9. Document ID: US 5368806 A

L10: Entry 9 of 21

File: USPT

Nov 29, 1994

US-PAT-NO: 5368806

DOCUMENT-IDENTIFIER: US 5368806 A

TITLE: Production of moldings by the reaction injection molding process

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

☐ 10. Document ID: US 5334676 A

L10: Entry 10 of 21

File: USPT

Aug 2, 1994

US-PAT-NO: 5334676

DOCUMENT-IDENTIFIER: US 5334676 A

TITLE: Epoxy resin advanced with polyphenol/oxyalkylated aromatic or cycloyaliphatic diglycidyl ether product

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KVMC

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Terms	Documents
16 and (organic adj acid)	21

Display Format:

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**WEST**[Generate Collection](#)[Print](#)**Search Results - Record(s) 11 through 20 of 21 returned.**☐ 11. Document ID: US 5276071 A

L10: Entry 11 of 21

File: USPT

Jan 4, 1994

US-PAT-NO: 5276071

DOCUMENT-IDENTIFIER: US 5276071 A

TITLE: Phenol-terminated oxyalkylated or (cyclo)aliphatic diglycidyl ethers

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KVMC](#)☐ 12. Document ID: US 5260356 A

L10: Entry 12 of 21

File: USPT

Nov 9, 1993

US-PAT-NO: 5260356

DOCUMENT-IDENTIFIER: US 5260356 A

TITLE: Transesterification cure of thermosetting latex coatings

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KVMC](#)☐ 13. Document ID: US 5239018 A

L10: Entry 13 of 21

File: USPT

Aug 24, 1993

US-PAT-NO: 5239018

DOCUMENT-IDENTIFIER: US 5239018 A

TITLE: Liquid polymer and polyol compositions, and process for preparing phenol-functional polymer

<a href="#">Full</a>	<a href="#">Title</a>	<a href="#">Citation</a>	<a href="#">Front</a>	<a href="#">Review</a>	<a href="#">Classification</a>	<a href="#">Date</a>	<a href="#">Reference</a>	<a href="#">Sequences</a>	<a href="#">Attachments</a>
<a href="#">Draw Desc</a>	<a href="#">Image</a>								

[KVMC](#)☐ 14. Document ID: US 5212262 A

L10: Entry 14 of 21

File: USPT

May 18, 1993

US-PAT-NO: 5212262

DOCUMENT-IDENTIFIER: US 5212262 A



TITLE: Epoxy resin advanced with diphenol/diglycidyl ether adducts

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 15. Document ID: US 5072026 A

L10: Entry 15 of 21

File: USPT

Dec 10, 1991

US-PAT-NO: 5072026

DOCUMENT-IDENTIFIER: US 5072026 A

TITLE: Polyureas by reaction injection moulding of enamino-functional aliphatic polyether resin-containing systems and an enamine-terminated polyether

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 16. Document ID: US 4983659 A

L10: Entry 16 of 21

File: USPT

Jan 8, 1991

US-PAT-NO: 4983659

DOCUMENT-IDENTIFIER: US 4983659 A

TITLE: Reaction injection molding compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 17. Document ID: US 4935460 A

L10: Entry 17 of 21

File: USPT

Jun 19, 1990

US-PAT-NO: 4935460

DOCUMENT-IDENTIFIER: US 4935460 A

TITLE: Reaction injection molding compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments	KMIC
Draw Desc	Image									

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☐ 18. Document ID: US 4855184 A

L10: Entry 18 of 21

File: USPT

Aug 8, 1989

US-PAT-NO: 4855184

DOCUMENT-IDENTIFIER: US 4855184 A

TITLE: Radiation-curable protective coating composition

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KUMC

☐ 19. Document ID: US 4794129 A

L10: Entry 19 of 21

File: USPT

Dec 27, 1988

US-PAT-NO: 4794129

DOCUMENT-IDENTIFIER: US 4794129 A

TITLE: Reaction injection molding compositions

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

KUMC

☐ 20. Document ID: US 4687709 A

L10: Entry 20 of 21

File: USPT

Aug 18, 1987

US-PAT-NO: 4687709

DOCUMENT-IDENTIFIER: US 4687709 A

TITLE: Magnetic recording carrier containing radiation hardenable dispersing agents

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
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Terms	Documents
l6 and (organic adj acid)	21

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L10: Entry 21 of 21

File: USPT

Oct 11, 1977

US-PAT-NO: 4053415

DOCUMENT-IDENTIFIER: US 4053415 A

TITLE: Unsaturated polyester ether having a photocrosslinkable moiety

Full	Title	Citation	Front	Review	Classification	Date	Reference	Sequences	Attachments
Draw Desc	Image								

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Terms	Documents
l6 and (organic adj acid)	21

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